

### IN THE CLAIMS

Please delete all prior claim lists in the application and insert the following claim list:

1. ~~[CANCEL] A medication for increasing capacitation of mammalian sperm, the medication comprising a combination of two or more agents selected from the group consisting of calcitonin, angiotensin II, and a modulator of adenosine receptor activity.~~
2. ~~[PREVIOUSLY CANCELED] A combined medication according to claim 1, in which the modulator of adenosine receptor activity is fertilization promoting peptide (fpp) or adenosine or a specific adenosine receptor agonist.~~
3. ~~[PREVIOUSLY CANCELED] A combined medication according to claim 1, in which the modulator of adenosine receptor activity is FPP, adenosine, or a mixture of FPP and adenosine (FPP/adenosine).~~
4. ~~[PREVIOUSLY CANCELED] A combined medication according to claim 1, comprising the two agents consisting of calcitonin and FPP.~~
5. ~~[PREVIOUSLY CANCELED] A combined medication according to claim 1, comprising calcitonin, FPP (or FPP/adenosine), and angiotensin II.~~
6. ~~[PREVIOUSLY CANCELED] A composition for the treatment of infertility in humans, comprising a pharmaceutically acceptable carrier containing two or more of the agents specified in any of claims 1 to 5.~~
7. ~~[PREVIOUSLY CANCELED] A composition for the treatment of infertility in humans, comprising a pharmaceutically acceptable carrier containing two or all of~~

~~the hormones FPP (or FPP/adenosine), calcitonin and angiotensin II for topical application.~~

8. ~~[PREVIOUSLY CANCELED] A composition according to claim 7, being in the form of a cream or jelly or pessary.~~
9. ~~[PREVIOUSLY CANCELED] A composition according to claim 7 or 8, containing from 100 nM to 100  $\mu$ M FPP or from 10  $\mu$ M to 10 mM adenosine, from 5 ng/ml to 5  $\mu$ g/ml salmon calcitonin or from 200 ng/ml to 200  $\mu$ g/ml of human calcitonin and from 1 nM to 1  $\mu$ M angiotensin II.~~
10. ~~[PREVIOUSLY CANCELED] A sperm preparation for use in the treatment of infertility containing two or more agents each of which is selected from the groups consisting of (1) calcitonin, (2) angiotensin II, and (3) a modulator of adenosine receptor activity.~~
11. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10, containing from 25 to 500 nM FPP or from 0.5 to 100  $\mu$ M adenosine.~~
12. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10 or 11, containing from 2 to 150 ng/ml salmon calcitonin or from 20 to 1000 ng/ml g/ml human calcitonin.~~
13. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10, 11, or 12, containing from 0.5 to 100 nM angiotensin II.~~
14. ~~[PREVIOUSLY CANCELED] A sperm preparation for use in the treatment of infertility containing two or more of the agents specified in claims 10 to 13, in the concentrations specified therein.~~

15. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10, containing from 12.5 to 500 nM FPP or from 0.5  $\mu$ M to 100  $\mu$ M adenosine.~~
16. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10 or 15, containing from 0.5 to 150 ng/ml salmon calcitonin or from 2 ng/ml to 1000 ng/ml of human calcitonin.~~
17. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10, 15, or 16, containing from 0.1 to 100 nM angiotensin II.~~
18. ~~[PREVIOUSLY CANCELED] A sperm preparation for use in the treatment of infertility containing two or more of the agents specified in claims 15 to 17 in the concentrations specified therein.~~
19. ~~[PREVIOUSLY CANCELED] A sperm preparation according to any of claims 10 to 18, for human clinical use.~~
20. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 10, for agricultural use.~~
21. ~~[PREVIOUSLY CANCELED] A sperm preparation according to claim 20, containing concentrations of added FPP from 12.5 nM to 1  $\mu$ M (preferably 50 nM to 1  $\mu$ M) or adenosine from 0.5 to 100  $\mu$ M, salmon calcitonin from 0.5 to 400 ng/ml (preferably 2 to 400 ng/ml) or porcine calcitonin from 2 to 1000 ng/ml (preferably 20 to 1000 ng/ml), and angiotensin II from 0.1 to 100 nM (preferably 0.5 to 100 nM).~~

22. ~~[PREVIOUSLY CANCELED] A frozen sperm preparation according to any of claims 10 to 21.~~
23. ~~[PREVIOUSLY CANCELED] A thawed sperm preparation containing agents as specified in any of claims 10 to 21 added after thawing and prior to insemination.~~
24. ~~[PREVIOUSLY CANCELED] The use of combined medication, composition, or sperm preparation according to any of the preceding claims, to promote fertilizing ability in mammalian sperm.~~
25. ~~[PREVIOUSLY CANCELED] The use according to claim 24, in which the hormones are administered simultaneously, sequentially, or separately.~~
26. ~~[PREVIOUSLY CANCELED] The use of human, porcine or salmon calcitonin, in conjunction with FPP/adenosine and human angiotensin II, to promote fertilizing ability in mammalian sperm.~~
27. ~~[PREVIOUSLY CANCELED] A method of promoting fertility in mammals which comprises administering two or more of the agents specified in any of claims 1 to 5 administered simultaneously, sequentially, or separately.~~
28. ~~[PREVIOUSLY CANCELED] A method of promoting fertility in mammals which comprises administering two or three of the hormones FPP/adenosine, calcitonin and angiotensin II to a mammal in need thereof.~~
29. ~~[PREVIOUSLY CANCELED] A method of improving in vitro fertilization or artificial insemination which comprises adding two or more of the hormones calcitonin, FPP (or FPP/adenosine), and angiotensin II to sperm prior to use.~~

30. ~~[PREVIOUSLY CANCELED] The use of angiotensin II in the preparation of a medicament for stimulating the capacitation of mammalian sperm.~~
31. ~~[PREVIOUSLY CANCELED] A method of stimulating the capacitation of sperm which comprises adding angiotensin II to a sperm preparation or administering angiotensin II to a patient in need thereof or to the female reproductive tract.~~
32. ~~[PREVIOUSLY CANCELED] A composition for stimulating the capacitation of sperm comprising angiotensin II.~~
33. ~~[PREVIOUSLY CANCELED] A composition according to claim 32, containing from 1 nM to 1  $\mu$ M angiotensin II, or being a sperm preparation containing from 0.5 to 100 nM angiotensin II.~~
34. [CURRENTLY AMENDED] The medication composition of Claim 1 ~~88~~, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a specific adenosine receptor agonist.
35. [CURRENTLY AMENDED] The medication composition of Claim 1 ~~88~~, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a combination of fertilization promoting peptide and adenosine.
36. [CURRENTLY AMENDED] The medication composition of Claim 1 ~~88~~, comprising a combination of calcitonin and fertilization promoting peptide.

37. **[CURRENTLY AMENDED]** The **medication composition** of Claim **1 88**, comprising a combination of calcitonin, angiotensin II and fertilization promoting peptide.
38. **[CURRENTLY AMENDED]** The **medication composition** of Claim **1 88**, comprising a combination of calcitonin, angiotensin II, fertilization promoting peptide, and adenosine.
39. **[CURRENTLY AMENDED]** The **medication composition** of Claim **1 88**, wherein the calcitonin is selected from the group consisting of salmon calcitonin, porcine calcitonin, and human calcitonin.
40. **[CURRENTLY AMENDED]** The **medication composition** of Claim **1 88**, further comprising a pharmaceutically-suitable carrier.
41. **[CURRENTLY AMENDED]** A composition of matter **for** treating infertility in humans, the composition comprising, **in a combination:** ~~of two or more agents selected from the group consisting of~~ calcitonin, angiotensin II, and a modulator of adenosine receptor activity.
42. **[PREVIOUSLY ADDED]** The composition of Claim 41, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a specific adenosine receptor agonist.
43. **[PREVIOUSLY ADDED]** The composition of Claim 41, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a combination of fertilization promoting peptide and adenosine.

44. ~~[CANCEL] The composition of Claim 41, comprising a combination of calcitonin and fertilization promoting peptide.~~
45. ~~[CANCEL] The composition of Claim 41, comprising a combination of calcitonin and adenosine.~~
46. ~~[CANCEL] The composition of Claim 41, comprising a combination of calcitonin and angiotensin H.~~
47. **[CURRENTLY AMENDED]** The composition of Claim ~~41~~ **43**, comprising a combination of fertilization promoting peptide and adenosine.
48. ~~[CANCEL] The composition of Claim 41, comprising a combination of fertilization promoting peptide and angiotensin H.~~
49. ~~[CANCEL] The composition of Claim 41, comprising a combination of angiotensin H and adenosine.~~
50. ~~[CANCEL] The composition of Claim 41, comprising a combination of calcitonin, angiotensin H and fertilization promoting peptide.~~
51. **[PREVIOUSLY ADDED]** The composition of Claim 41, comprising a combination of calcitonin, angiotensin II, fertilization promoting peptide, and adenosine.
52. **[PREVIOUSLY ADDED]** The composition of Claim 41, further comprising a pharmaceutically-suitable carrier.
53. **[PREVIOUSLY ADDED]** The composition of Claim 52, wherein the carrier is suitable for topical application.

54. **[PREVIOUSLY ADDED]** The composition of Claim 53, comprising from about 100 nM to about 100  $\mu$ M fertilization promoting peptide, from about 5 ng/ml to about 5  $\mu$ g/ml salmon calcitonin, and from about 1 nM to about 1  $\mu$ M angiotensin II.
55. **[PREVIOUSLY ADDED]** The composition of Claim 53, comprising from about 10  $\mu$ M to about 10 mM adenosine, from about 5 ng/ml to about 5  $\mu$ g/ml salmon calcitonin, and from about 1 nM to about 1  $\mu$ M angiotensin II.
56. **[PREVIOUSLY ADDED]** The composition of Claim 53, comprising from about 100 nM to about 100  $\mu$ M fertilization promoting peptide, from about 200 ng/ml to about 200  $\mu$ g/ml human calcitonin, and from about 1 nM to about 1  $\mu$ M angiotensin II.
57. **[PREVIOUSLY ADDED]** The composition of Claim 53, comprising from about 10  $\mu$ M to about 10 mM adenosine, from about 200 ng/ml to about 200  $\mu$ g/ml human calcitonin, and from about 1 nM to about 1  $\mu$ M angiotensin II.
58. **[PREVIOUSLY ADDED]** A composition of matter comprising human sperm admixed with a combination of two or more agents selected from the group consisting of calcitonin, angiotensin II, and a modulator of adenosine receptor activity.
59. **[PREVIOUSLY ADDED]** The composition of Claim 58, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a specific adenosine receptor agonist.
60. **[PREVIOUSLY ADDED]** The composition of Claim 58, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization



promoting peptide, adenosine, and a combination of fertilization promoting peptide and adenosine.

61. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising a combination of calcitonin and fertilization promoting peptide.
62. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising a combination of calcitonin, angiotensin II and fertilization promoting peptide.
63. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising a combination of calcitonin, angiotensin II, fertilization promoting peptide, and adenosine.
64. **[PREVIOUSLY ADDED]** The composition of Claim 58, further comprising a pharmaceutically-suitable carrier.
65. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising from about 25 nM to about 500 nM fertilization promoting peptide.
66. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising from about 12.5 nM to about 500 nM fertilization promoting peptide.
67. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising from about 0.5  $\mu$ M to about 100  $\mu$ M adenosine.
68. **[PREVIOUSLY ADDED]** The composition of Claim 58, wherein the calcitonin is selected from the group consisting of salmon calcitonin at a concentration of from about 0.5 ng/ml to about 150 ng/ml and human calcitonin at a concentration of from about 2 ng/ml to about 1,000 ng/ml.

69. **[PREVIOUSLY ADDED]** The composition of Claim 58, comprising from about 0.1 nM to about 100 nM angiotensin II.
70. **[PREVIOUSLY ADDED]** The composition of Claim 58, wherein the composition is frozen.
71. **[PREVIOUSLY ADDED]** The composition of Claim 58, wherein the composition has been frozen and thawed.
72. **[PREVIOUSLY ADDED]** A method of promoting fertility in mammals, the method comprising administering to a mammal, simultaneously, sequentially, or separately, a fertility-enhancing amount of two or more agents selected from the group consisting of calcitonin, angiotensin II, and a modulator of adenosine receptor activity.
73. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a specific adenosine receptor agonist.
74. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a combination of fertilization promoting peptide and adenosine.
75. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein calcitonin and fertilization promoting peptide are administered.
76. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein calcitonin, angiotensin II and fertilization promoting peptide are administered.

77. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein calcitonin, angiotensin II, fertilization promoting peptide, and adenosine are administered.
78. **[PREVIOUSLY ADDED]** The method of Claim 72, wherein a calcitonin selected from the group consisting of salmon calcitonin, porcine calcitonin, and human calcitonin is administered.
79. **[PREVIOUSLY ADDED]** A method of *in vitro* fertilization or artificial insemination, the method comprising adding to mammalian sperm, simultaneously, sequentially, or separately, a capacity-enhancing amount of two or more agents selected from the group consisting of calcitonin, angiotensin II, and a modulator of adenosine receptor activity.
80. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a specific adenosine receptor agonist.
81. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein the modulator of adenosine receptor activity is selected from the group consisting of fertilization promoting peptide, adenosine, and a combination of fertilization promoting peptide and adenosine.
82. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein calcitonin and fertilization promoting peptide are added.
83. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein calcitonin, angiotensin II and fertilization promoting peptide are added.

84. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein calcitonin, angiotensin II, fertilization promoting peptide, and adenosine are added.
85. **[PREVIOUSLY ADDED]** The method of Claim 79, wherein a calcitonin selected from the group consisting of salmon calcitonin, porcine calcitonin, and human calcitonin is added.
86. **[PREVIOUSLY ADDED]** A method of stimulating capacitation of mammalian sperm, the method comprising adding angiotensin II to sperm, administering angiotensin II to a male mammalian subject in need thereof, or delivering angiotensin II to a reproductive tract of a female mammalian subject to be inseminated.
87. **[PREVIOUSLY ADDED]** The method of Claim 86, wherein the angiotensin II is administered in combination with a pharmaceutically-suitable carrier and the angiotensin II is present in an amount of from about 0.5 nM to about 100 nM.
88. **[NEW]** A composition suitable for contacting mammalian sperm to increase capacitation thereof, the composition consisting essentially of a combination of calcitonin and one or more agents selected from the group consisting of angiotensin II and a modulator of adenosine receptor activity, in amounts effective to stimulate capacitation of the sperm and to inhibit a spontaneous acrosome reaction in the therapeutic treatment of infertility *in vivo* or *in vitro*.